WHAT IS CLAIMED IS:

1. A method for combining electrode components comprising:
an active material,
an ionically-conductive polymer,
an electrolyte salt,
and no added solvent,
the method comprising processing the electrode components using a single screw extruder.

2. The method of claim 1 wherein the combined electrode components include a total of less than 0.8 percent by weight solvent.

3. The method of claim 1 wherein the combined electrode components include a total of less than 0.1 percent by weight solvent.

4. The method of claim 1 wherein comprises active material selected from the group consisting of oxides of vanadium, its lithiated versions, and mixtures thereof.

5. The method of claim 1 wherein the electrode components comprise at least 40% /wt of said active material.

6. The method of claim 1 wherein the electrode components comprise at least 50% /wt of said active material.

7. The method of claim 1 wherein the electrode components comprise at least 60% /wt of said active material.

8. The method of claim 1 wherein the electrode components comprise from about 57-67 weight percent active material.

9. The method of claim 1 wherein the electrode components further comprise electrically-conductive material comprising carbon black, graphite, or a combination thereof.

10. The method of claim 9 wherein the electrically-conductive material comprises a mixture of carbon and graphite in a ratio of carbon/graphite ranging from about 0.5:1 to 2:1.

11. The method of claim 1 wherein the ionically-conductive polymer is selected from the group consisting of: polymers or copolymers of ethylene oxide, and cyclic ether oxides.

12. The method of claim 11 wherein the ionically-conductive polymer comprises a polyethylene oxide.

13. The method of claim 1 wherein the electrolyte salt comprises a lithium salt.

14. The method of claim 13 wherein the lithium salt is TFSI bis(trifluoromethanesulfonyl)imide salt.

15. A method for combining electrode components comprising:
an active material,
an ionically-conductive polymer,
an electrolyte salt,

wherein the method comprises processing the electrode components using a single screw extruder and
wherein the electrode components are processed in a molten state.

16 A method of producing a battery cathode, the method comprising:
processing a mixture of ingredients comprising greater than about 50 weight percent active material, from about 1 to about 10 weight percent electrically-conductive material comprising carbon black, graphite, or a combination thereof, from about 10 to about 40 weight percent polymer comprising ionically-conductive polyethylene oxide polymer, from about 4 to about 10 weight percent lithium salt, wherein the mixture includes a total of less than about 0.8 percent by weight solvent, the method comprising using a single or twin screw extruder and processing the mixture in a molten state.

17. A method for combining electrode components comprising:
an active material,
an ionically-conductive polymer,
an electrolyte salt,
and no added solvent,
the method comprising processing the electrode components using a twin screw extruder.

18. The method of claim 17 wherein the combined electrode components include a total of less than 0.8 percent by weight solvent.

19. The method of claim 17 wherein the combined electrode components include a total of less than 0.1 percent by weight solvent.

20. The method of claim 17 wherein comprises active material selected from the group consisting of oxides of vanadium, its lithiated versions, and mixtures thereof.

21. The method of claim 17 wherein the electrode components comprise at least 40% /wt of said active material.

22. The method of claim 17 wherein the electrode components comprise at least 50% /wt of said active material.

23. The method of claim 17 wherein the electrode components comprise at least 60% /wt of said active material.

24. The method of claim 17 wherein the electrode components comprise from about 57-67 weight percent active material.

25. The method of claim 17 wherein the electrode components further comprise electrically-conductive material comprising carbon black, graphite, or a combination thereof.

26. The method of claim 25 wherein the electrically-conductive material comprises a mixture of carbon and graphite in a ratio of carbon/graphite ranging from about 0.5:1 to 2:1.

27. The method of claim 17 wherein the ionically-conductive polymer is selected from the group consisting of:

polymers or copolymers of ethylene oxide, and cyclic ether oxides.

28. The method of claim 27 wherein the ionically-conductive polymer comprises a polyethylene oxide.

29. The method of claim 17 wherein the electrolyte salt comprises a lithium salt.

30. The method of claim 29 wherein the lithium salt is TFSI bis(trifluoromethanesulfonyl)imide salt.

31. A method for combining electrode components comprising:
an active material,
an ionically-conductive polymer,
an electrolyte salt,
and no added solvent,
the method comprising processing the electrode components using a reciprocating single screw extruder.

32. The method of claim 31 wherein each electrode component contains essentially no solvent.

33. The method of claim 31 wherein each electrode component is a dry material that contains no solvent.

34. The method of claim 31 wherein the combined electrode components include essentially no solvent.

35. The method of claim 31 wherein the combined electrode components include a total of less than 0.5 percent by weight solvent.

36. The method of claim 31 wherein the active material comprises a metal oxide.

37. The method of claim 31 wherein the active material comprises a metal oxide selected from the group consisting of oxides of vanadium, manganese, cobalt, nickel, chromium, aluminum, tungsten, molybdenum, titanium, their lithiated versions, and mixtures thereof.

38. The method of claim 31 where the active material comprises a vanadium oxide.

39. The method of claim 31 wherein the electrode components comprise from about 50-86 weight percent active material.

40. The method of claim 31 wherein the electrode components comprise from about 60-68 weight percent active material.

41. The method of claim 31 wherein the components further comprise electrically-conductive material comprising carbon black, graphite, or a combination thereof

42. The method of claim 31 wherein the ionically-conductive polymer comprises a derivative of monomers comprising an oxygen-containing monomer or a nitrogen-containing monomer.

43. The method of claim 31 wherein the ionically-conductive polymer comprises a polyalkylene oxide polymer or copolymer.

44. The method of claim 31 wherein the electrolyte salt comprises a fluorinated lithium salt.

45. The method of claim 31 wherein the electrolyte salt is chosen from the group consisting of lithium hexafluoroarsenate, lithium perchlorate, lithium hexafluorophosphate, lithium trifluoroborate, lithium trifluoromethanesulfonate, lithium bis(trifluoromethanesulfonyl)imide, lithium bis(perfluoroethanesulfonyl)imide, lithium tris(trifluoromethanesulfonyl)methide, and mixtures thereof.

46. The method of claim 31 wherein the electrode components comprise:
greater than about 50 weight percent active material,
from about 1 to about 10 weight percent electrically-conductive material comprising carbon black, graphite, or a combination thereof,
from about 10 to about 40 weight percent ionically-conductive polymer,
from about 3 to about 15 weight percent lithium salt,
and less than about 0.5 weight percent solvent.

47. The method of claim 46 wherein the active material comprises a metal oxide selected from the group consisting of oxides of vanadium, manganese, cobalt, nickel, chromium, aluminum, tungsten, molybdenum, titanium, their lithiated versions and mixtures thereof.

48. The method of claim 46 where the ionically-conductive polymer comprises a derivative of monomers comprising an oxygen-containing monomer or a nitrogen-containing monomer.

49. The method of claim 46 wherein the ionically-conductive polymer comprises a polyalkylenoxide polymer or copolymer.

50. The method of claim 46 wherein the lithium salt is chosen from the group consisting of lithium hexafluoroarsenate, lithium perchlorate, lithium hexafluorophosphate, lithium trifluoroborate, lithium trifluoromethanesulfonate, lithium bis(trifluoromethanesulfonyl)imide, lithium bis(perfluoroethanesulfonyl)imide, lithium tris(trifluoromethanesulfonyl)methide, and mixtures thereof.

51. The method of claim 31 wherein the extruder comprises multiple feed inlets and a downstream extruding end, and wherein
the ionic salt feeds into the extruder at a first feed position,
the ionically-conductive polymer, the active material, and the electrically-conductive material each feed into the extruder at one or more feed positions downstream from the ionic salt feed position.

52. The method of claim 51 wherein the ionically-conductive polymer feeds into the extruder as a solid containing no solvent.

53. The method of claim 51 wherein the ionically-conductive polymer feeds into the extruder as a melt.

54. The method of claim 51 wherein the ionically-conductive polymer feeds into the extruder at a second position downstream from the first feed position, and a mixture comprising active material and electrically-conductive material is fed at a third feed position downstream from the second feed position.

55. The method of claim 51 wherein ionically-conductive polymer, active material, and electrically-conductive material are combined and fed into the extruder as a single mixture at a second feed position.

56. The method of claim 51 wherein a mixture comprising active material, electrically-conductive material, and ionically-conductive polymer is fed at a second feed position, and a mixture comprising active material and electrically-conductive material is fed at a third feed position downstream from the second feed position.

57. A method for combining electrode components comprising:
an active material,
an ionically-conductive polymer,
an electrolyte salt,
wherein the method comprises processing the electrode components using a reciprocating single screw extruder and
wherein an ionically-conductive polymer salt complex material is processed in a molten state.

58. A method of producing a battery cathode, the method comprising processing a mixture of ingredients comprising:
greater than about 50 weight percent active material,
from about 1 to about 10 weight percent electrically-conductive material comprising carbon black, graphite, or a combination thereof,
from about 10 to about 40 weight percent polymer comprising ionically-conductive polyalkylenoxide polymer,
from about 3 to about 15 weight percent fluorinated lithium salt, wherein the mixture includes a total of less than about 0.5 percent by weight solvent, the method comprising using a reciprocating extruder and processing an ionically-conductive polymer salt complex in a molten state.

59. The method of claim 58 further comprising depositing an extrudate of the electrode components onto a substrate.

60. The method of claim 59 wherein the substrate is chosen from the group consisting of a liner, a current collector, a separator, or an electrolyte.

61. The method of claim 58 wherein the ingredients include at least about 50 weight percent active ingredient.

62. The method of claim 58 wherein the ingredients include at least about 60 weight percent lithiated vanadium oxide.

63. A method for combining electrode components comprising: ionically-conductive polymer, electrolyte salt,

the method comprising processing electrolyte components using a reciprocating single screw extruder, wherein ionically-conductive polymer is fed to the extruder downstream from electrolyte salt.

64. The method of claim 63 wherein the ionically-conductive polymer feeds into the extruder as a melt.

65. The method of claim 63 wherein the electrode components contain no added solvent.

66. The method of claim 63 wherein the components further comprise active material.